

LOW THERMAL BUDGET SOLUTION FOR PMD APPLICATION USING SACVD LAYER

ABSTRACT OF THE DISCLOSURE

The present invention provides exemplary methods, apparatus and systems for planarizing an insulating layer, such as a borophosphosilicate glass (BPSG) layer, deposited over a substrate. In one embodiment, a substrate (140) is inserted into a substrate processing chamber and a BPSG layer (142) is deposited thereover. The BPSG layer has an upper surface that is generally non-planar, due in part to the underlying nonplanar substrate surface (130). The substrate is exposed to an ultraviolet (UV) light (160) at conditions sufficient to cause a reflow of the BPSG layer so that the BPSG layer upper surface (150) is generally planar. In this manner, photonic energy is used to promote BPSG reflow, thereby reducing the thermal budget requirements for such a process.